

R E M A R K S

Reconsideration of this application, as amended, is respectfully requested.

ALLOWABLE SUBJECT MATTER

The Examiner's indication of the allowability of the subject matter of claims 5 and 24-26 is respectfully acknowledged.

New claim 32 has been added to recite to the subject matter of allowable claim 5 including all of the limitations of its parent claim 1 and intervening claim 4. And new claim 33 has been added to recite the subject matter of allowable claim 24 including all of the limitations of its parent claim 16. Accordingly, it is respectfully submitted that new claims 32 and 33 are in condition for immediate allowance.

Claims 5 and 24-26, however, have not been rewritten in independent form at this time since, as set forth in detail hereinbelow, it is respectfully submitted that their respective parent claims 1 and 16, as amended, also recite allowable subject matter.

THE CLAIM AMENDMENTS

Claims 1 and 16 have been amended to clarify the feature of the present invention whereby the power supply system generates

supply electric power to drive a load using power generation fuel. Claim 1 has been further amended to clarify the feature of the present invention whereby the power supply system comprises output controlling means for operating and stopping the power generating means according to a consumption of power due to the load. And claim 16 has been further amended to clarify the feature of the present invention whereby the electric charge is adapted to be used to generate electric power to drive the load.

In addition, claims 11 and 27 have been amended to clarify the feature of the present invention whereby the power supply system is modularized and configured such that a physical outside shape of the power supply system has a shape and dimensions which are substantially equivalent to a shape and dimensions of a corresponding general-purpose chemical, so as to overcome the rejection under 35 USC 112, second paragraph.

Still further, claims 1, 2, 6, 10, 11, 13, 15, 16, 19, 20, 23-27 and 29 have been amended to make some minor grammatical improvements and/or to correct minor antecedent basis problems so as to put the claims in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

CLAIM FEE

The application was originally filed with 31 claims of which 2 were independent. The application now contains 33 claims, of which 4 are independent. Accordingly, a claim fee in the amount of \$118.00 for the addition of 1 extra independent claim and 2 extra claims in total is attached hereto. In addition, authorization is given to charge any additional fees which may be determined to be required to Account No. 06-1378.

THE PRIOR ART REJECTION

Claims 1-4, 6-8, 13, 16, 17, 21, 22 and 29 were rejected under 35 USC 102 as being anticipated by one of EP 1,009,054 ("Ohara et al") and USP 5,714,874 or DE 44 31 747 ("Bonneyfoy"), and claims 9-12, 14, 15, 18-20, 23, 27, 28, 30 and 31 were rejected under 35 USC 103 as being obvious in view of various combinations of Ohara et al or Bonneyfoy with USP 4,883,724 ("Yamamoto"), USP 5,759,712 ("Hockaday"), USP 6,096,448 ("Wilkinson et al") and USP 5,439,758 ("Stone et al"). These rejections, however, are respectfully traversed.

According to the present invention as recited in amended claim 1, a power supply system is provided which generates supply electric power to drive a load using power generation fuel, wherein the power supply system comprises a fuel charged portion in which the power generation fuel is charged, power generating

means for generating power generation electric power by using the power generation fuel, output controlling means for operating and stopping the power generating means according to a consumption of power due to the load, and start-up controlling means for supplying start-up electric power used for operating the output controlling means to the output controlling means.

By contrast, the system disclosed by Ohara et al comprises a fuel cell 1, an auxiliary device 2 for supplying a fuel, a direct current transducer 3, and a secondary battery 5. And the system of Ohara et al has a structure which is connected to the secondary battery 5 to start to operate, after supplying hydrogen to the fuel cell 1.

In Ohara et al, after being driven, the fuel cell 1 is operated in a regular mode. In this regular operation, direct-current power generated by the fuel cell 1 is converted into a predetermined voltage by the direct current transducer 3, and the predetermined voltage is applied to an external load output terminal 4 through a circuit switching control portion 7, thereby applying the predetermined voltage to a load. The secondary battery 5 is charged with the power generated by the fuel cell 1, and the auxiliary device 2 is driven by the generated power. When the load rapidly varies, and the output voltage of the fuel cell 1 lowers, charging of the secondary battery 5 is stopped, and the auxiliary device 2 is

driven by the secondary battery 5, thereby reducing the load on the fuel cell 1 and preventing lowering of the output voltage. That is, in Ohara et al, the fuel cell 1 operates at all times, and the load on the fuel cell 1 is adjusted in accordance with variation of the load.

Significantly, the present invention as recited in amended claim 1 has a structure for operating and stopping the load on the fuel cell in accordance with the power consumption of the load. Ohara et al, by contrast, does not at all disclose, teach or suggest stopping the load on the fuel cell.

According to the present invention as recited in amended independent claim 16, moreover, a power supply system is provided which generates supply electric power to drive a load using power generation fuel, wherein the power supply system comprises a fuel charged portion in which the power generation fuel is charged, power generating means for generating power generation electric power by using the power generation fuel, electric power holding means for holding electric charge based on the power generation electric power generated by the power generating means, wherein the electric charge is used to generate an electric power to drive the load, and system controlling means for controlling operation and stopping of the operation of the power generating means and for controlling charging and stopping of the charging

of the electric power holding means in accordance with a change in the held electric power.

In Ohara et al, the electric power for driving the load is supplied by outputting the output voltage of the fuel cell 1 through the direct direct-current transducer 3. By contrast, in the power supply system of the present invention as recited in amended claim 16, the electric power for driving the load is generated based on the electric charge held by the electric power holding means.

As explained hereinabove, in the control operation of Ohara et al, in the regular operation state, direct-current power generated by the fuel cell 1 is supplied to the external load outputting terminal 4 through the circuit switching control portion 7, thereby applying a predetermined voltage to the load, and the load on the fuel cell 1 is adjusted in accordance with the variation of the load. Thus, in Ohara et al the fuel cell 1 is operated at all times.

By contrast, the power supply system of the present invention as recited in amended claim 16 has a structure for controlling operation and stopping of the operation of the power generating means and for controlling charging and stopping of the charging of the electric power holding means, in accordance with the variation of the electric charge held by the electric power holding means.

It is respectfully submitted that Ohara et al does not at all disclose, teach or suggest the features of the present invention as recited in amended claim 16 whereby the electric power for driving the load is generated based on the electric charge held by the electric power holding means and whereby system controlling means controls operation and stopping of the operation of the power generating means and controls charging and stopping of the charging of the electric power holding means.

Still further, it is respectfully submitted that Bonnefoy also does not disclose, teach or suggest the distinguishing features of the present invention as recited in claim 16. In Bonnefoy, the generator comprises a fuel cell 1, a holding battery 3, a load 4 and a control circuit 5. In Bonnefoy, the fuel cell 1 is connected to the battery 3 in parallel, and at the time of driving, electric power is supplied from the battery 3 to the load 4, and the fuel cell 1 is heated and driven by the battery 3. Thereafter, electric power is supplied from the fuel cell 1 to the load 4. Then, when the electric power necessary for the load 4 is less than the electric power generated by the fuel cell 1, the battery 3 is charged with the excess of the electric power. When the electric power necessary for the load is more than that generated by the fuel cell 1, electric power is supplementally supplied from the battery 3 to the load. That is, in the regular operation, except at the time of driving, the

electric power generated by the fuel cell 1 is mainly supplied to the load 4, and only when the electric power necessary for the load 4 exceeds the electric power by the fuel cell 1, electric power is supplementally supplied from the battery 3.

By contrast, in the power supply system of the present invention as recited in claim amended 16, the electric power for driving the load is generated based on the electric charge held by the electric power holding means, and operation and stopping of the operation of the power generating means and charging and stopping of the charging of the electric power holding means are controlled in accordance with the variation of the electric charge held by the electric power holding means. And it is respectfully submitted that Bonnefoy does not at all disclose, teach or suggest these features of the present invention as recited in amended claim 16.

Still further, it is respectfully submitted that Wilkinson et al does not disclose, teach or suggest the feature of the present invention as recited in claim 20 whereby the electric power holding means has a structure such that a plurality of capacitance elements are connected with a predetermined relationship.

And, it is respectfully submitted Stone et al does not disclose the feature of the present invention as recited in claims 10, 14, 15, 23, 30 and 31 whereby the fuel charged portion

is detachable (not integrally constituted). In this connection, the detachable fuel unit 24 of Stone et al comprises a housing and a row of metal-air cells each comprising an anode and a cathode. Therefore, the fuel unit 24 is an electric power generating portion that does not correspond to the fuel charged portion of the present invention.

In view of the foregoing, it is respectfully submitted that the present invention as recited in each of independent claims 1 and 16, as well as each of claims 2-15 and 17-31 respectively depending therefrom, patentably distinguishes over the cited references, taken singly or in any combination, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,



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